

IN THE CLAIMS

Amend the claims as follows.

1. (Currently Amended) A system comprising:

a computer communicatively coupled to a network device over a network, [[the]] said computer operable to:

display a document including ~~editable~~ text, where said text is editable and corresponds ~~corresponding~~ to a local copy of a configuration file for [[the]] said network device, [[the]] said ~~editable~~ text representing a plurality of ~~different~~ objects, wherein said objects are different from one another and that each control different functionality of [[the]] said network device;

receive a user input modifying a selected portion of [[the]] said text that corresponds to one of [[the]] said objects;

send a first code component to said network device;

receive a second code component from said network device in response to said sending said first code component;

initiate an automatic completion of a user inputted command, wherein said first code component comprises a textual fragment of said user inputted command, wherein said second code component comprises [[the]] a completed command in its entirety, and wherein said completed command in its entirety is added to said text;

wherein [[the]] said document is retrieved from [[the]] said network device in response to a user request or written by a user; and

exchange communications with [[the]] said network device prior to receiving a subsequent user input that modifies a different portion of [[the]] said text that corresponds to a different one of [[the]] said objects, [[the]] said communications for:

dynamically modifying a remote copy of [[the]] said configuration file that is stored on [[the]] said network device without exchanging an entire copy of [[the]] said configuration file between [[the]] said computer and [[the]] said network device; and

generating incremental configuration changes in [[a]] said network device.

2. (Currently Amended) The system of claim 1 wherein [[the]] said network device is reconfigured dynamically and interactively while [[the]] said user modifies [[the]] said text displayed by [[the]] said computer.

3. (Canceled)

4. (Currently Amended) The system of claim 1 further comprising:
[[the]] said network device to send [[the]] said completed command to [[the]] said computer for synchronizing changes to [[the]] said local copy of [[the]] said configuration file with changes to [[the]] said remote copy of [[the]] said configuration file; and

[[the]] said computer to receive [[the]] said completed command and update [[the]] said displayed document based on [[the]] said completed command.

5. (Currently Amended) The system of claim 4 wherein [[the]] said document displays [[the]] said textual fragment when [[the]] said network device initiates reconfiguration based on [[the]] said complete command.

6. (Currently Amended) The system of claim 1 wherein [[the]] said network device is configured to perform syntax checking on edited lines transferred from [[the]] said computer responsive to [[the]] said communication exchange.

7. (Currently Amended) The system of claim 1 wherein [[the]] said computer is operable to use a Command Line Interface (CLI) parser installed on [[the]] said network device to process [[the]] said user request.

8. (Currently Amended) The system of claim 7 wherein [[the]] said computer does not emulate a replication of [[the]] said Command Line Interface (CLI) parser of [[the]] said network device.

9. (Currently Amended) The system of claim 8 wherein [[the]] said computer leverages [[the]] a command correction capability of [[the]] said network device so that changes to a first command-set used for command correction on [[the]] said network device ~~does~~ do not require an update to a second command-set on [[the]] said computer.

10. (Currently Amended) The system of claim 1 wherein [[the]] said computer is further operable to send [[the]] said selected portion of [[the]] said text to [[the]] said network device without sending different unchanged portions of [[the]] said text.

11. (Currently Amended) The system of claim 1 further comprising:
[[the]] said computer to form a transport object;
[[the]] said computer to generate code indicating [[the]] said modifications to [[the]] said selected portion of [[the]] said text; and
[[the]] said computer to dispose said transport object containing [[the]] said code within a transport medium.

12. (Currently Amended) The system of Claim 11 wherein said code comprises a command configured to instruct [[the]] said network device to make corresponding modifications to [[the]] said remote copy of [[the]] said configuration file.

13. (Currently Amended) The system of Claim 12 wherein said command configured to instruct said network device to make corresponding modifications to said remote copy of said configuration file is rendered in Command Line Interface format.

14. (Previously Presented) The system of Claim 11 wherein said transport medium comprises an interface and wherein said interface substantially complies with Common Object Request Broker Architecture.

15. (Currently Amended) The system of Claim 14 wherein ~~[[the]]~~ said computer is configured to form said transport object by embedding said code within a set of tags and wherein said tags comprise Extensible Markup Language markers.

16. (Previously Presented) The system of Claim 11 wherein said transport medium comprises a serial line interface.

17. (Previously Presented) The system of Claim 11 wherein said transport medium comprises Telnet.

18. (Previously Presented) The system of Claim 11 wherein said transport medium comprises Secure Shell.

19-23. (Cancelled)

24. (Currently Amended) A computer readable storage medium storing a program having instructions, the instructions when executed by a processor to cause a computer to:

provide a development environment application;

change a document using a text editing tool co-functional with said development environment application, wherein said document comprises a configuration for ~~[[said]]~~ a network device and wherein said configuration is retrieved from said network device in response to a user request;

display said document on a user interface co-functional with said development environment application and allow a user to make ~~[[a]]~~ said change to said document via said user interface;

generate code corresponding to said change via a code generator co-functional with said user interface; and

send said change to said network device via a communication module co-functional with said code generator, wherein said communication module is operable to:

send a first code component from said communication module to said network device; and

receive a second code component from said network device at said communication module in response to said first code component; and

wherein said user request comprises at least one request selected from the group comprising:

initiate an automatic completion of a command entered by said user into said document, wherein said first code component comprises a textual fragment of said command, wherein said second code component comprises said command in its entirety, and wherein said command in its entirety is added to said document;

request a list of commands that are appropriate to a position in said document, wherein said first code component requests said list, wherein said second code component comprises said list, wherein said list is displayed to said user, and wherein said user may select a command from said list for insertion into said document at said position; and

initiate a syntax check, wherein said first code component comprises a request for said syntax check, wherein said second code component comprises a detection of an error in said document, and wherein said document is updated to display said error.

25. (Currently Amended) The computer readable storage medium as recited in Claim 24 wherein said change in said configuration is sent without sending an unchanged component of said configuration to said network device and wherein said communication module is further operable to:

form a transport object wherein said transport object contains code comprising said change; and

dispose said transport object within a transport medium wherein said transport medium comprises ~~a medium selected from the group~~ comprises an interface, wherein said interface complies with Common Object Request Broker Architecture, and wherein ~~[[the]]~~ said transport medium is selected from the group comprising;

a serial line interface;

Telnet; and

Secure Shell.

26. (Previously Presented) The computer readable storage medium as recited in Claim 25 wherein the instructions when executed by a processor, further cause a computer to;

highlight a part of said document to implement said change using a highlighting module to indicate which parts of said document have been modified; and

restore said configuration to a state prior to implementing said change using an undo manager.

27. (Currently Amended) A method comprising:

displaying a document including text corresponding to a configuration file stored on a remotely located network device, ~~[[the]]~~ said text representing multiple different objects that each control different operational characteristics of ~~[[the]]~~ said remotely located network device;

receiving a user input modifying a selected portion of ~~[[the]]~~ said text that corresponds to a first subset of ~~[[the]]~~ said objects;

sending one or more communications over a network to ~~[[the]]~~ said network device prior to receiving a subsequent user input that modifies a different portion of ~~[[the]]~~ said text that corresponds to a second different subset of ~~[[the]]~~ said objects, ~~[[the]]~~ said communications configured to cause ~~[[the]]~~ said network device to

dynamically modify [[the]] said configuration file that is stored on [[the]] said network device;

sending a first code component to said network device;

receiving a second code component from said network device in response to said sending said first code component;

initiating an automatic completion of a user inputted command, wherein said first code component comprises a textual fragment of said user inputted command, wherein said second code component comprises said command in its entirety, and wherein said command in its entirety is added to said text; and

after performing command completion responsive to receiving [[the]] said second code component, updating a display of [[the]] said textual fragment with [[the]] said command in its entirety to synchronize [[the]] said display with [[the]] said configuration file located on [[the]] said network device.

28. (Currently Amended) The method of claim 27 wherein [[the]] said communications include payload data configured to control only a subset of [[the]] said operational characteristics that corresponds to [[the]] said first subset of [[the]] said objects such that [[the]] said method does not require transferring an entire copy of [[the]] said configuration file to or from [[the]] said network device to elicit [[the]] said dynamic modification of [[the]] said configuration file.

29. (Cancelled)

30. (Currently Amended) The method of claim 27 further comprising:
forming a transport object for sending [[the]] said communications, wherein said transport object contains code configured to control said dynamic modification of [[the]] said configuration file; and

disposing said transport object within a transport medium.

31. (Previously Presented) The method of claim 30 wherein said code comprises a command and wherein said command is rendered in Command Line Interface format.

32. (Currently Amended) The method of claim 30 wherein said transport medium comprises a medium selected from the group consisting of:

a medium comprising an interface wherein said interface substantially complies with Common Object Request Broker Architecture;

a serial line interface;

Telnet; and

Secure Shell.

33. (Currently Amended) An apparatus, comprising:

means for displaying a document including text to a local user upon receiving a configuration of a remote network device, wherein said document comprises [[the]] said configuration for said remote network device in a text format and wherein said computer apparatus is coupled to said remote network device;

means for allowing said user to modify said text comprising said document;

means for interacting with [[the]] said remote network device to provide [[the]] said modified text to [[the]] said remote network device, wherein said interacting means comprises;

means for sending a first code component comprising at least a portion of [[the]] said modified text to said remote network device;

means for receiving a second code component from said remote network device in response to said sending said first code component;

means for initiating an automatic completion of a user inputted command, wherein said first code component comprises a textual fragment of said user inputted command, wherein said second code component comprises said command in its entirety, and wherein said command in its entirety is added to said text; and

means for updating a display of [[the]] said textual fragment with [[the]] said command in its entirety to synchronize [[the]] said display with [[the]] a configuration file located on [[the]] said remote network device after performing command completion responsive to receiving [[the]] said second code component.

34. (Currently Amended) The apparatus as recited in Claim 33 wherein said modified text includes a syntax error and wherein [[the]] said second code component comprises [[the]] said portion of [[the]] said modified text with [[the]] said syntax error corrected.

35. (Cancelled)

36. (Currently Amended) The apparatus as recited in Claim 34 further comprising:

means for forming a transport object wherein said transport object contains [[the]] said first code component; and

means for disposing said transport object within a transport medium.

37. (Currently Amended) The apparatus as recited in Claim 36 wherein [[the]] said ~~computer~~ apparatus is configured to interact with [[the]] said remote network device to provide [[the]] said ~~changed~~ modified text independently of whether [[the]] said ~~computer~~ apparatus detects that [[the]] said ~~changed~~ modified text comprises an incomplete command and wherein said transport medium comprises a medium selected from the group consisting of:

a medium comprising an interface and wherein said interface substantially complies with Common Object Request Broker Architecture;

a serial line interface;

Telnet; and

Secure Shell.

38-46. (Cancelled)

47. (Currently Amended) The system of claim 1 wherein [[the]] said computer is configured to communicate directly with [[the]] said network device such that said direct communications are not affected by or exchanged via an intermediary data processing module that generates configuration data in the form of a list or directory and restricts configuration modification to user selections from said list or directory.

48. (Currently Amended) A system comprising:
a computer communicatively coupled to a network device over a network, the computer operable to:
display a document including editable text corresponding to a local copy of a configuration file for [[the]] said network device, [[the]] said editable text representing a plurality of different objects that each control different functionality of [[the]] said network device;
receive a user input modifying a selected portion of [[the]] said editable text that corresponds to one of [[the]] said plurality of different objects wherein [[the]] said user input represents a textual fragment to be automatically completed by [[the]] said computer;
send a first code component to [[the]] said network device, [[the]] said first code component representing [[the]] said textual fragment;
receive back a second code component, [[the]] said second code component comprising a complete command that corresponds to [[the]] said textual fragment;
exchange communications with [[the]] said network device prior to receiving a subsequent user input that modifies a different portion of [[the]] said editable text that corresponds to a different one of [[the]] said plurality of different objects, [[the]] said communications for:
dynamically modifying a remote copy of [[the]] said configuration file that is stored on [[the]] said network device without exchanging an entire copy of

[[the]] said configuration file between [[the]] said computer and [[the]] said network device; and
generating incremental configuration changes in [[a]] said network device;
and
updating [[the]] said displayed document to include [[the]] said complete command.

49. (Currently Amended) A system comprising:
a computer communicatively coupled to a network device over a network, the computer operable to:
display a document including editable text corresponding to a local copy of a configuration file for [[the]] said network device, [[the]] said editable text representing a plurality of different objects that each control different functionality of [[the]] said network device;
receive a user input modifying a selected portion of [[the]] said editable text that corresponds to one of [[the]] said plurality of different objects, wherein [[the]] said user input selects a position within [[the]] said editable text;
exchange communications with [[the]] said network device prior to receiving a subsequent user input that modifies a different portion of [[the]] said editable text that corresponds to a different one of [[the]] said plurality of different objects, [[the]] said communications to:
dynamically modify a remote copy of [[the]] said configuration file that is stored on [[the]] said network device without exchanging an entire copy of [[the]] said configuration file between [[the]] said computer and [[the]] said network device; and
generate incremental configuration changes in [[a]] said network device;
send a first code component requesting a list of commands that are appropriate to [[the]] said user selected position within [[the]] said editable text;
receive back a second code component representing said list of commands;
display [[the]] said list of commands for user selection;

responsive to receiving a user selection from [[the]] said list, insert a corresponding one of [[the]] said commands from [[the]] said list into said editable text at said position; and

initiate an automatic completion of a user inputted command, wherein said first code component comprises a textual fragment of said user inputted command, wherein said second code component comprises [[the]] said completed command in its entirety, and wherein said completed command in its entirety is added to said editable text.

50. (Currently Amended) A system comprising:

a computer communicatively coupled to a network device over a network, the computer operable to:

display a document including editable text corresponding to a local copy of a configuration file for [[the]] said network device, [[the]] said editable text representing a plurality of different objects that each control different functionality of [[the]] said network device;

receive a user input modifying a selected portion of [[the]] said editable text that corresponds to one of [[the]] said plurality of different objects;

initiate an automatic completion of a user inputted command, wherein said user inputted command is incomplete and wherein [[said]] a completed command in its entirety is added to said editable text;

exchange communications with [[the]] said network device prior to receiving a subsequent user input that modifies a different portion of [[the]] said editable text that corresponds to a different one of [[the]] said plurality of different objects, [[the]] said communications to:

dynamically modify a remote copy of [[the]] said configuration file that is stored on [[the]] said network device without exchanging an entire copy of [[the]] said configuration file between [[the]] said computer and [[the]] said network device; and

generate incremental configuration changes in [[a]] said network device;

send a first code component to [[the]] said network device responsive to [[the]] a user modifying [[the]] said editable text, [[the]] said first code component requesting a syntax check by [[the]] said network device on [[the]] said modified text; and
receive back a second code component indicating a syntax error in [[the]] said modified text; and
display [[the]] said syntax error.

51. (Currently Amended) An apparatus comprising:
one or more processors; and
a memory coupled to the processors comprising instructions executable by the processors, the processors operable when executing the instructions to:
display an editable document representing a local copy of a configuration file stored on a remote network device, [[the]] said editable document representing a plurality of different objects that each control different functionality of [[the]] said remote network device;
detect an input modifying [[the]] said editable document;
responsive to detecting [[the]] said input, send a first code component representing a command fragment over a network and to [[the]] said remote network device;
receive back a second code component over [[the]] said network and from said remote network device, [[the]] said second code component including a command corresponding to [[the]] said command fragment;
initiate an automatic completion of an input modifying [[the]] said editable document [[text]], [[the]] said automatic completion to update a display of [[the]] said command fragment with [[the]] said command in its entirety to synchronize [[the]] said displayed editable document with [[the]] said reconfigured configuration file located on [[the]] said remote network device; and
exchange communications with [[the]] said network device prior to receiving a subsequent input modifying a different portion of [[the]] said editable document [[text]]

that corresponds to a different one of [[the]] said plurality of different objects, [[the]] said communications for:

dynamically modifying a remote copy of [[the]] said configuration file that is stored on [[the]] said remote network device without exchanging an entire copy of [[the]] said configuration file between [[the]] said computer and [[the]] said network device; and

generating incremental configuration changes in [[a]] said network device.

52. (Currently Amended) The apparatus of claim 51,
wherein [[the]] said second code component includes an indication that [[the]] said configuration file stored on [[the]] said remote network device has been modified according to [[the]] said corresponding command; and
wherein said modification of [[the]] said configuration file stored on [[the]] said remote network device occurs before [[the]] said second code component is received and before [[the]] said editable document is updated with [[the]] said command in its entirety.

53. (Currently Amended) The apparatus of claim 51 wherein said first code component comprises a textual fragment of a predetermined textual modification and [[the]] said second code component comprises [[the]] said textual modification in its entirety, and wherein [[the]] said textual modification is added to [[the]] said editable document [[text]].

54. (Currently Amended) The apparatus of claim 51 wherein the processors are further operable when executing the instructions to:

modify [[the]] said configuration file stored on [[the]] said remote device incrementally by repeating iterations of:

detecting an input modifying [[the]] said editable document;

responsive to detecting [[the]] said input, sending [[a]] an nth code component to [[the]] said remote device;

receiving back an (n + 1)th code component over [[the]] said network and from said remote network device, [[the]] said (n+1)th code component responsive to [[the]] said nth code component; and

updating a display of [[the]] said editable document to reflect [[the]] said remote network device response.

55. (Currently Amended) The apparatus of claim 54 wherein [[the]] said nth code component represents at least a request for a list of commands that correlate to an indicated position within [[the]] said editable document and wherein [[the]] said (n+1)th code component represents at least said list of commands.

56. (Currently Amended) The apparatus of claim 54 wherein [[the]] said nth code component represents at least a request for a syntax check of [[the]] said modified editable document and wherein [[the]] said (n+1)th code component represents at least an indication of a syntax error in [[the]] said modified editable document [[text]].